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16. *CALATHODES POLYCARPA* OHWI (RANUNCULACEAE) — A NEW RECORD FOR INDIADEBABRATA MAITY¹ AND G.G. MAITI²

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The genus *Calathodes* Hook. f. & Thomson (Family: Ranunculaceae) was established by Hook. f. & Thomson (1855) with the description of only one species *Calathodes palmata* Hook. f. & Thomson based on the collection from Sikkim, 3,000 m above msl. J.D. Hooker, *s.n.*

Later, three more species were added, namely *C. oxycarpa* Sprague (in Bull. Misc. Inform. Kew 1919: 403.1919); *C. polycarpa* Ohwi (in Acta Phytotax. Geobot. 2: 153.1933) and *C. unciiformis* Wang (in Bull. Bot. Res., Harbin 16: 165.1996), all considered to be endemic to China (Liangqian and Tamura 2001). However, later *C. polycarpa* Ohwi was recorded from Formosa, Japan, by Ohwi (*l.c.*) based on the specimen Ohwi 4211 and also noted to be present in Taiwan.

During the floristic study of Kanchenjunga Biosphere Reserve, Sikkim, as well as Sikkim Himalaya, we collected one specimen from Zemu valley, between Log Bridge and Jakthang (Maity and Maiti 21373) with the following distinguishing features: greenish-white flowers, numerous (*c.* 30) carpels with gibbous-deltoid base and shorter styles, different from that of the commonly known Sikkimese species *C. palmata* Hook. f. & Thomson.

A critical study revealed its identity as *Calathodes polycarpa* Ohwi, which is a new record to India. Moreover, its disjunct distribution is now known in Sikkim (India), Formosa, China, Japan and Taiwan.

The collected specimen of *Calathodes* was identified as *C. polycarpa* Ohwi by matching with the protologue and Liangqian and Tamura (2001), and solely based on the field observation and examination of the collected plants.

Detailed description along with illustration is provided here. It is also compared with *Calathodes palmata* (Table 1)

and a key of known four species of *Calathodes* is given to facilitate its identity.

Key to the species of *Calathodes*

1. Flowers white or greenish white 2
- Flowers yellow 3
2. Lamina 2-3 x 3.2-5 cm; carpels 7-15 *C. oxycarpa*
- Lamina 4-6 x 6-9 cm; carpels 30-60 *C. polycarpa*
3. Carpels less than 20, without projection *C. palmata*
- Carpels more than 30, with projection *C. unciiformis*

Calathodes polycarpa Ohwi in Acta Phytotax. Geobot. 2: 153. 1933; Liangqian & Tamura, Fl. China 6: 137. 2001 (Fig. 1).

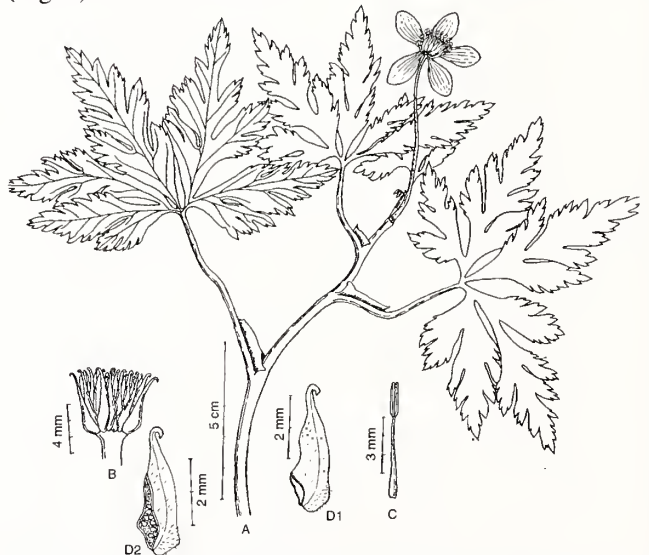


Fig. 1: *Calathodes polycarpa*: A. Habit; B. Etario of follicles (immature); C. Stamen; D1. Carpel; D2. Carpel splitted in the lower part showing ovules (from Maity & Maiti 21373)

Table 1: Comparison of *C. palmata* and *C. polycarpa*

Sl. No.	Important features	<i>C. palmata</i>	<i>C. polycarpa</i>
1.	Leaf	Numerous	5-7
2.	Flower colour	Yellow	White or greenish-white
3.	Carpel	10-15, oblong, base gibbous	30-60, falcate-oblong, laterally compressed, base deltoid-gibbous
4.	Follicle	Obliquely obovate, c. 9.0x4.5 mm	Dorsally keeled, suprabasal deltoid gibbous
5.	Projection on carpel base	Absent	Present

Terrestrial, erect herb, up to 55 cm tall; stems with few branches or simple, glabrous. Leaves 5-7, both rosette and cauline, palmately tripartite; lamina 4-6 x 6-9 cm, mid-lobe rhombic, 3-fid; laterals obliquely flabellate, unequally 2-parted; apex acute, margin incised-serrate, glabrous on both the surfaces; petioles 7-14 cm long, auriculate at base; auricles c. 1.5 cm long. Flower solitary, terminal, 1.8-3.0 cm diam., borne on c. 1.5 cm long pedicel; sepals petaloid, obovate-

elliptic, 0.9-1.6 x 0.5-0.9 cm, white to greenish-white, glabrous; petals absent; stamens 15-20; filaments filiform, 3-7 mm long; anthers linear-oblongoid, 2.0-2.5 mm long, latrorse; carpels 30-60, falcate-oblong, 4-5 x 1 mm, laterally compressed; base deltoid-gibbous, sparsely papillose; style short, c. 1 mm long, recurved. Follicles 30-60, each 7-10 mm long with 1.5-2.0 mm long persistent style; projection distinct on dorsal surface.

Specimen Examined: North Sikkim, Zemu Valley, between Log Bridge and Jakthang, 3,000 m, 13.vi.1999, Maity & Maiti 21373-BSHC.

Flowering & Fruiting: June-August.

Distribution: INDIA: Sikkim; China, Taiwan, Japan, Formosa.

Grows on the forest floor, open grassy slopes in temperate forest between 1,800-3,000 m.

Note: In our specimen the number of carpels is about 30 and the deltoid-gibbous base is sparsely papillose.

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17. *TRICHOSANTHES LOBATA* ROXB. (CUCURBITACEAE) — A NEW RECORD FOR GARHWAL HIMALAYA, INDIA

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The genus *Trichosanthes* (Cucurbitaceae) is represented by 22 species in India, and is distributed mainly in the tropics and sub-tropics (Chakravorty 1982). *Trichosanthes lobata* Roxb., closely allied to *T. cucumerina* L., is reported from Andhra Pradesh, Tamil Nadu, Uttar Pradesh and West Bengal. However, so far, there is no record of its occurrence from Uttarakhand (Uniyal *et al.* 2007). Floristic records from north-west Himalaya (Hooker 1872-1897; Duthie 1903-1929, 1906; Babu 1977; Raizada and Saxena 1978; Naithani 1984-1985; Gaur 1999) have no mention of this species from this part of the country.

During plant collections in the Alaknanda valley, the authors collected the species from open sloppy fields near the

road side in the third week of August, 2008. The voucher specimen is deposited in the Herbarium, Department of Botany, H.N.B. Garhwal University, Srinagar, Garhwal (GUH).

The diagnostic characters, locality, field number and notes are given below:

Trichosanthes lobata Roxb. *Fl. Ind.* 3: 703.1832: Kurz in *J. As. Soc. Beng.* 46(2): 98. 1877; Clarke in Hook. f. *Fl. Brit. Ind.* 2: 610. 1879; Kundu in *J. Bombay Nat. Hist. Soc.* 43: 373. 1943.

Diagnostic Characters: Extensive climber, stems slender, sulcate. Leaves entire, 5-lobed, denticulate; petioles up to 8-10 cm long, puberulous; lamina 16-18 x 14-16 cm, membranous, suborbicular, base deeply cordate, slightly